

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 91-052

WASTE DISCHARGE REQUIREMENTS FOR:

KELLER CANYON LANDFILL COMPANY
CLASS II SOLID WASTE DISPOSAL SITE
PITTSBURG, CONTRA COSTA COUNTY

FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The Keller Canyon Landfill Company, a wholly owned subsidiary of Browning Ferris Industries of California, Inc., (hereafter discharger), submitted the "Report of Waste Discharge, Keller Canyon Landfill", (ROWD), dated October 2, 1990 and "Site Characterization Report" dated September, 1989. The ROWD was submitted as an application for Waste Discharge Requirements for construction of a new Class-II waste management unit in compliance with California Code of Regulations, Title 23, Division 3, Chapter 15, (Chapter 15). The ROWD contains a Waste Characterization Report, a Preliminary Landfill Design, an Operations Plan, and a Closure and Post-closure Maintenance Plan.
2. The site is located three and a half miles south of Suisun Bay, south of the City of Pittsburg, east of Bailey Road, north of Mulligan Hill and north of the City of Concord situated in the foothills of the Mt. Diablo Range. The Assessors Parcel numbers are as follows:
094-050-110 094-070-001 097-020-001 094-060-001 094-080-003 094-130-006
094-060-002 094-100-001 097-170-001 090-011-001 094-120-001
3. The proposed site occupies 2,628 acres of Sections 23, 24, 25 & 26 of Township 2N-1W, MDB&M. The landfill activities will encompass a total of 375 acres while the limit of waste disposal as shown on Attachments A & B, are 244 acres. The remaining 2,253 acres will be reserved for open space and agricultural uses.
4. The Discharger proposes to discharge municipal solid waste, non-hazardous waste, construction and demolition waste, and dewatered sewage sludge for disposal in the Class-II Waste Disposal Unit, as shown on Attachments A & B. These wastes are classified as "designated", "non-hazardous solid waste", or "inert waste" using criteria set forth in Chapter 15.

5. The landfill will provide over 30 years of waste capacity for the entire County waste stream. The current waste stream is approximately 1.2 million tons per year, but could change in response to community growth and recycling efforts.
6. The waste stream for the Contra Costa County area, as specified in the ROWD is as follows:

o	Residential	40% (by weight)
o	Commercial	27%
o	Industrial	16%
o	Construction/Demolition	17%
7. The landfill will be designed, as specified in the Report of Waste Discharge and this Order, to assure that groundwaters do not come in contact with waste by including a composite clay and synthetic membrane liner system overlain by a Leachate Collection and Removal system, and underlain by a granular drain system. Chapter 15 requires either a 2 foot clay liner or a 40 mil synthetic liner. The proposed design exceeds the minimum requirements of Chapter 15 by including both, two feet of clay and an 80 mil (2mm) thick synthetic liner. Chapter 15 requires a 5 foot separation between waste and groundwater. The proposed design would provide 2 to 3 feet of separation.
8. The proposed landfill design satisfactorily meets Chapter 15 requirements except for the 5 foot separation of waste to groundwater. Pursuant to Section 2510, Chapter 15, the proposed containment design is a satisfactory engineered alternative to this requirement. The design is consistent with the performance goal of maintaining separation between groundwater and waste and it affords equivalent protection against water quality impairment.
9. Compliance with the 5 foot separation specification of Chapter 15 is impractical due to excessive cost of additional fill needed to provide the separation. Also, in comparison to the proposed design, compliance with the separation requirement will not promote containment of the waste. The proposed design provides greater assurance of isolation of waste from groundwater than compliance with the minimum requirements for separation provided for in Chapter 15.

HYDROGEOLOGY

10. Keller Canyon and the surrounding hills are located south of Suisun Bay in the Los Medanos Hills along the northern flank of the Diablo Range. The topography is predominantly rolling hills with a few outcrops of moderately dipping weather resistant bedrock. The bedrock underlying the proposed landfill consists primarily of alternating sequences of siltstone and claystone of the Kreyenhagen Formation dipping about 30 degrees from horizontal in a north-easterly direction. Unconsolidated deposits overlying the bedrock consist

of alluvium and landslide deposits in the canyon drainage, and a thin mantle of colluvium and residual soils on the canyon side slopes.

11. Keller Canyon is a closed hydrologic basin consisting of approximately 558 acres that discharges to an inlet of the City of Pittsburg's storm drain system which eventually enters into Suisun Bay. The watershed's discharge volume is estimated to be between zero to five gallons per minute, (gpm), in the dry seasons to up to 180 gpm during wet seasons. The 1,000 year, 24 hour precipitation event, as estimated by computer modeling, could produce a peak flow rate of up to 305 cubic feet per second for the existing site conditions of the water shed.
12. Earthquakes posing a threat to the landfill could occur along the San Andreas, Concord and the Clayton Faults. The maximum free field ground acceleration is estimated to be 0.65g originating from a Richter Magnitude 6.25 Maximum Credible Earthquake from the Clayton fault about 1 mile from the site; (Distance to the Concord Fault is about 6 miles and to the San Andreas Fault is about 37 miles).
13. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin on December 17, 1986; this order implements the water quality objectives of that Basin Plan.
14. The existing and potential beneficial uses of the surface waters in the vicinity of the site include:

Livestock Water Supply
Wildlife Habitat
Warm Water Habitat
15. The existing and potential beneficial uses of the ground waters in the vicinity of the site include:
Municipal Water Supply
Agricultural Supply
Industrial Process Water Supply
Industrial Service Supply
16. Groundwater in the bedrock and within the unconsolidated materials beneath the Keller Canyon Landfill area contains levels of TDS, chloride, and sulfate exceeding the federal secondary drinking water standards. The concentrations of nitrate and iron are also above the federal standards at some locations. The groundwater in this area is not considered suitable or potentially suitable for municipal or domestic water supply.

CEQA

17. The County of Contra Costa has certified a final Environmental Impact Report in accordance with the California Environmental Quality Act (CEQA, Public Resources Code Section 21000 et. seq.). The proposed landfill and landfill activity, as approved by the County, could cause significant effects on water quality and may degrade the water quality unless appropriate mitigation measures are taken. Potential impacts to the water quality could occur as a result of:
 - o Earthquake damage or failure of leachate collection system;
 - o Earthquake damage or failure of sediment pond;
 - o Downstream inundation in the event of sediment pond failure;
 - o Slope instability or failure as a result of water saturation of embankments;
 - o Potential degradation of surface water quality as a result of increased sediment load and/or erosion;
 - o Potential groundwater contamination due to contact with leachate;
 - o Potential downstream impacts to aquatic biota from accidental discharge of contaminated water.
 - o Alteration of existing surface and groundwater flow;
 - o Depletion of surface flow and loss of perennial stream;
18. The Board has considered the Keller Canyon Landfill FEIR and the mitigation measures described therein relating to the protection of surface water and groundwater quality. In the Keller Canyon FEIR, the following mitigation measures were recommended for the protection of surface water and groundwater quality:
 - o Construction of a surface and subsurface drainage system to accommodate drainage affected by development of the site.
 - o The monitoring of surface water flows and augmentation through recharge, if necessary.
 - o Design of sedimentation ponds to withstand the Maximum Credible Earthquake.
 - o Project excavation should coincide with low flow periods. Sediments within sedimentation ponds should be removed at least annually to prevent decrease in their holding capacity.
 - o Onsite monitoring of groundwater levels would be conducted to estimate project impact on storage and flow. A recharge program should be implemented if there are demonstrated to be impacts on downgradient water use.
 - o Implementation of erosion and sedimentation control techniques, include timing of landfill construction to coincide with dry season, road shoulder berms, covering areas of high erosion potential, diverting and controlling water runoff, and reseeding exposed areas.

- o Downslope sedimentation ponds would be designed to handle half of the peak annual yield.
 - o Seismic design of the landfill to withstand the MCE on the Clayton fault.
 - o Avoidance of leachate contamination of groundwater through a three tiered design. (1) Leachate formation would be limited by a surface water drainage system and daily cover. (2) Leachate containment would be provided by a double liner system consisting of a clay liner overlain by a synthetic liner of at least 60-mil thickness. (3) A leachate collection system would be developed, composed of a layer of permeable drainage material below the base of refuse, a piping system and collection sumps to channel the leachate to leachate management facility.
 - o A monitoring well system would be designed to detect potential leachate leaks, off-site. Wells could be converted to extraction wells in the event of leachate migration.
 - o Surface water quality would be monitored per RWQCB requirements.
 - o Samples from groundwater monitoring wells would be analyzed quarterly.
 - o Mitigation measures imposed in the Leachate Control and Engineering construction section of the FEIR. These include barriers, sedimentation ponds, drainage control and sump pumps.
 - o Surface drainage around the site should be visually inspected regularly.
19. The Board finds the preceding impacts, as outlined in the document "FINDINGS IN SUPPORT OF A REZONING, WILLIAMSON ACT CANCELLATION, MINOR SUBDIVISION, AND ISSUANCE OF A LAND USE PERMIT FOR REFUSE DISPOSAL FOR THE KELLER CANYON LANDFILL PROJECT", July 24, 1990, are mitigated or avoided by a series of design measures to control erosion and assure containment of waste and leachate through the use of liners, leachate collection and removal systems, groundwater control and limits on the physical dimensions of the fill. The mitigation measures are described in the ROWD, Contra Costa County Land Use Permit 2020-89 and by the Provisions of this WDR for the Keller Canyon Landfill, and are set forth above.
20. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
21. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Keller Canyon Landfill Company and any other persons that currently or in the future own this land or operate this facility, shall meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and shall also comply with the following:

A. PROHIBITIONS

1. The discharge of "hazardous waste" at this facility, except for waste that is hazardous due only to its friable asbestos content, is prohibited. For the purposes of this Order, the term "hazardous waste" is as defined in Chapter 15.
2. The discharge of liquid or semi-solid waste to the landfill unit, (i.e. waste containing less than 50% solids), except dewatered sewage or water treatment sludge as provided in Section 2523(c) of Chapter 15, is prohibited.
3. The discharge of wastes which have the potential to reduce or impair the integrity of the containment structures or which, if commingled with other wastes in the unit, which could produce chemical reactions that create heat or pressure, fire or explosion, toxic by-products, or reaction products which in turn:
 - a. require a higher level of containment than provided by the unit,
 - b. are "restricted hazardous wastes", or
 - c. impair the integrity of the containment structures,is prohibited.
4. The disposal of waste shall not create a condition of pollution or nuisance as defined in Sections 13050(l) and 13050(m) of the California Water Code.
5. Wastes shall not be placed in any area of the site until the Executive Officer has approved of the detailed design plans and a Construction Quality Assurance plan for the construction of the containment structures, and has received written certification by a California registered civil engineer or certified engineering geologist that the structures have been constructed in accordance with those plans.
6. Wastes shall not be placed in or allowed to contact ponded water from any source whatsoever.

7. Wastes shall not be disposed of in any way where they can be carried from the disposal site and discharged into waters of the State or of the United States.
8. The discharger, or any future owner or operator of this site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:
 - a. Surface Waters
 - Floating, suspended, or deposited macroscopic particulate matter or foam.
 - Bottom deposits or aquatic growth.
 - Adversely alter temperature, turbidity, or apparent color beyond natural background levels.
 - Visible, floating, suspended or deposited oil or other products of petroleum origin.
 - Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.
 - b. Groundwater
 - The groundwater shall not be degraded as a result of the waste disposal operation.
9. Leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or the United States.
10. Surface water collected from within the limits of waste disposal area shall not be discharged to waters of the State except as permitted by an NPDES Permit.

B. SPECIFICATIONS

1. Water used during disposal operations shall be limited to a minimal amount necessary for dust suppression and fire control.
2. The site shall be protected from any washout or erosion of wastes or covering material and from inundation which could occur as a result of a 100 year 24 hour precipitation event.
3. Surface drainage from tributary areas, and internal site drainage from surface and subsurface sources, shall not contact or percolate through wastes during disposal operations or during the life of the site. Surface drainage ditches shall be constructed to ensure that all rainwater is diverted away from the disposal area, such that it does not contact waste or leachate.
4. The discharger shall design, install and operate a Leachate Collection and Removal System, (LCRS), acceptable to the Executive Officer, for the landfill areas, so as to prevent the build-up of leachate in the landfill. The system shall be inspected monthly, and any accumulated fluid shall be removed and disposed of. The discharger shall submit reports, on an annual basis, which demonstrate that the leachate control system is functioning properly.

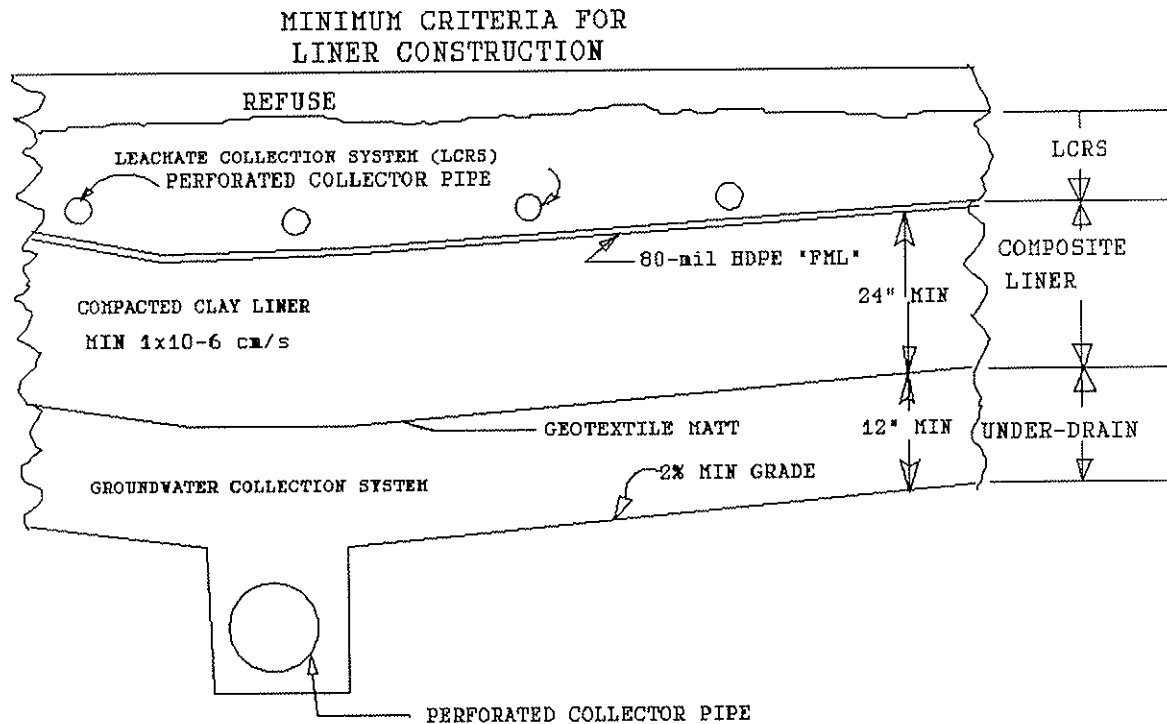
Measures shall be taken to ensure that leachate in the leachate collection system can flow freely into any collection sump. Measures shall also be taken to assure that the LCRS will remain operational throughout the closure/post-closure maintenance period of the landfill.

5. A periodic load checking program shall be implemented to ensure that hazardous materials are not discharged at the landfill. The report program must be acceptable to this Board and to the Department Of Health Services pursuant to Section 2523(b)(2) of Chapter 15. The program shall include but not be limited to:
 - a. Number of random load checks to be checked per week and/or month
 - b. Description of training program for on-site personnel and contract waste haulers
 - c. Record keeping and reporting program
 - d. Program implementation schedule
 - e. Alternatives for waste found to be not in compliance with this Order

6. The discharger shall ensure that the foundations of the landfills, and the structures which control leachate, surface drainage, erosion and gas migration for this site, are constructed and maintained to withstand conditions generated during a maximum credible earthquake event at the San Andreas and Clayton fault zones.
7. As portions of the landfill are closed, the exterior surfaces shall be graded to promote lateral runoff of precipitation. The final cover for the landfill will be constructed on 4H:1V slopes with 25-foot wide benches at 25-foot vertical intervals. This allows for a 100-foot horizontal distance between each bench and an overall slope angle of 5H:1V. In addition, all completed disposal areas shall be covered with a minimum of 4 feet of cover to include 2 feet structural base; 1 foot low permeability clay barrier; and 1 foot vegetative soil. The final cover must also meet all other applicable requirements as described in Article 8 of Chapter 15.
8. The discharger shall operate the waste management facility so as not to cause a statistically significant difference to exist between water quality at the compliance points and Water Quality Protection Standards (WQPS) to be established for the following applicable parameters. The discharger shall establish WQPS according to the requirements of this Order and Article 5 of Chapter 15 for the following minimum parameters:
 - a. pH
 - b. Electrical Conductivity
 - c. Chloride
 - d. Total Organic Carbon
 - e. Nitrate Nitrogen
 - f. Total Kjeldahl Nitrogen
 - g. Total Phenol
 - h. Total Dissolved Solids
 - i. Chemical Oxygen Demand
 - j. Arsenic
 - k. Cadmium
 - l. Total Chromium
 - m. Copper
 - n. Cyanide
 - o. Lead
 - p. Mercury
 - q. Nickel
 - r. Silver
 - s. Zinc

9. The concentrations of indicator parameters or waste constituents in waters passing through Points of Compliance, as defined in the Self Monitoring Program for this landfill, (Attachment C), shall not exceed the "Water Quality Protection Standards" (WQPS), established by Provision C.8 of this Order.
10. The discharger shall install any additional groundwater and leachate monitoring devices required to fulfill the terms of any Self-Monitoring Program issued to the discharger pursuant to Provision C.11 of this Order.
11. Designated wastes, Non-hazardous wastes, Asbestos and Medical wastes may be disposed of provided that all regulations and provisions of the California Integrated Waste Management Board, California Department of Health Services, local health agencies and County Land Use Permit requirements are complied with. Hazardous wastes may not be disposed of or stored at this site.
12. The landfill shall be designed and constructed in conformance to Chapter 15 and this Order. The design plans shall be submitted to the Board for review and approval and shall include, but not be limited to, the engineered design plans for the fill cell, the construction specifications, a construction quality assurance (QA/QC) plan, and a revised water quality monitoring plan. The final construction report shall include, but not be limited to, "as-built" drawings for the waste management unit, a QA/QC report with a written summary of the QA/QC program and all test results and analyses, and a certification as described in Specification B.14.

13. The landfill unit shall have a blanket-type LCRS immediately above the liner, which is designed and operated to prevent the development of hydraulic head on the liner. Minimum criteria for the liner shall include but not be limited to one foot of granular underdrain, two feet of low permeability clay, 80-"mil" HDPE liner and a dendritic LCRS. Details are as follows:



14. All reports pursuant to this Order shall be prepared under the supervision of a registered civil engineer, California registered geologist or certified engineering geologist.
15. Interim cover shall be maintained over all but the working face of the disposal area of the landfill. Title 14, California Code of Regulations (CCR), Section 17684 requires a compacted layer of at least 12 inches of intermediate cover be placed on all surfaces of the fill where no additional refuse will be deposited within 180 days.

16. Methane and other landfill gases shall be adequately vented, removed from the landfill units, or otherwise controlled to prevent the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration of gas through the vadose (unsaturated) zone.
17. Interim and final leachate sumps and berms shall be designed and constructed to withstand the maximum credible earthquake at the facility.
18. Landfill leachate shall be discharged to an above-ground, enclosed tank.
19. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations.
20. The discharger shall provide a minimum of two surveyed permanent monuments near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the operation and post-closure maintenance period. These monuments shall be installed by a licensed land surveyor or registered civil engineer.
21. The discharger shall maintain all devices or designed features, installed in accordance with this Order such that they continue to operate as intended without interruption except as a result of failures which could not have been reasonably foreseen or prevented by the discharger.

C. PROVISIONS

1. The discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order immediately upon adoption of this Order.
2. The discharger shall submit a plan to be implemented upon approval for monitoring deformations due to settlement of waste.
REPORT DUE DATE: January 2, 1992
3. The discharger shall submit a detailed **Post Earthquake Inspection and Corrective Action Plan** to be implemented in the event of any earthquake generating ground shaking of Modified Mercalli Intensity V or greater at or near the landfill. The report shall describe the containment features, and ground water monitoring and leachate control facilities potentially impacted by the static and seismic deformations of the landfill. The plan shall provide for reporting results of the post

earthquake inspection to the Board within 18 hours of the occurrence of the earthquake. Immediately after an earthquake event causing damage to the landfill structures, the corrective action plan shall be implemented and this Board shall be notified of any damage. **REPORT DUE DATE:** January 2, 1992

4. The discharger shall submit a detailed **Leachate Management Plan** for the landfill. This plan shall estimate the quantity of leachate produced, the storage of leachate, and the ultimate disposal of the leachate. The report should evaluate the quantity of leachate produced from the unit and determine the maximum safe operating level for the leachate containment facilities. In addition, the plan shall provide for an emergency leachate containment capacity of 150% of the primary containment facility.

The plan shall provide a detailed assessment of alternative treatment and disposal methods along with a plan for implementation of a preferred alternative or combination of alternatives. If recirculation of the leachate is to be considered, the discharger must demonstrate that the quantity of leachate being recirculated will not result in a solid to liquid ratio within the landfill of less than 5:1 by weight, using a 30% minimum moisture content of the solid waste.

REPORT DUE DATE: January 2, 1992

5. The discharger shall submit to this Board and to the California Integrated Waste Management Board, evidence of an **Irrevocable Closure Fund**, pursuant to Section 2580(f) of Chapter 15. The Closure Fund must provide sufficient funds to properly close the landfill and for the post-closure monitoring and maintenance of the site. For the purposes of planning the amount of the fund, the discharger shall assume a post-closure period of at least 30 years. However, the post-closure maintenance period shall extend as long as the wastes pose a threat to water quality.

REPORT DUE DATE: Prior to initiation of construction.

6. The discharger shall submit to the Board, for approval, a **preliminary closure and post-closure maintenance plan** pursuant to Title 23, CCR, Chapter 15, Article 9, Section 2597, not later than the time of application for each Solid Waste Facilities Permit Review, as required by the California Integrated Waste Management Board.
7. The discharger shall submit **Final Design Proposals** acceptable to the Executive Officer. The proposal should provide workplans for development of the various components of the landfill, including detailed

specifications for construction of composite liners and leachate collection and removal systems and should include Quality Assurance & Quality Control Procedures, (QA/QC), for all aspects of construction and installation. The proposal shall also address maintenance, operation and closure plans, as well as a slope stability analysis, for the landfill operation. The workplans for construction and operation of the liners and LCRS should include detailed specifications regarding the sequence of construction of the various segments of the project, and provide sufficient detail about how the various cells and modules of the landfill areas will interface structurally. All design and as-built construction reports must be approved in writing by the Executive Officer, prior to disposal of wastes in those areas.

REPORT DUE DATE: 2 months prior to initiation of construction.

8. The discharger shall submit in accordance with the requirements of Article 5 of Chapter 15 a report on the groundwater quality at the site that identifies the background concentrations and **Water Quality Protection Standards, (WQPS)**, for the constituents listed in Specification B.8 of this Order.
REPORT DUE DATE: July 1, 1992
9. Pursuant to Specification B.5, the discharger shall submit a **Load Checking and Hazardous Waste Exclusion Plan** to be implemented prior to initiation of any waste disposal operations.
REPORT DUE DATE: 3 months prior to waste acceptance.
10. Pursuant to Article 5 Section 2556 of Chapter 15, the discharger shall propose a groundwater and surface water monitoring program designed to detect any lateral or vertical contamination of groundwater at the site. In addition, the plan shall include a corrective action plan to be instituted in the event of a leak, spill or other form of groundwater contamination or potential contamination occurrence. If a groundwater contamination or potential contamination is detected the discharger shall give immediate notification to the San Francisco Bay Regional Water Quality Control Board, the Local Enforcement Agency (LEA), and the Department of Health Services (DOHS). The discharger shall initiate its corrective action plan to stop and contain the migration of pollutants from the existing landfill.
11. The discharger shall file with the Regional Board Self-Monitoring reports performed according to any **Self Monitoring Program, (SMP)**, issued by the Executive Officer.

12. The discharger shall comply with all applicable provisions of Chapter 15 that are not specifically referred to in this Order.
13. The discharger shall remove and relocate any wastes which are discharged at this site in violation of these requirements.
14. The discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of the waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries of the disposal areas or the ownership of the site.
15. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.
16. The discharger shall, at any time, permit the Regional Board or its authorized representative, upon presentation of credentials:
 - a. Entry upon the premises on which wastes are located or in which any required records are kept.
 - b. Access to copy any records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order.
 - d. Sampling of any discharge or groundwater covered by this Order.
17. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
18. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under Federal, State or Local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.
19. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.

20. Adoption of this Order does not constitute water quality certification under Section 401 of the Clean Water Act. Certification issues will be addressed by the Board at a later date.
21. This Order does not take effect until the U.S. Army Corps of Engineers has issued a permit pursuant to Section 404 of the Clean Water Act.

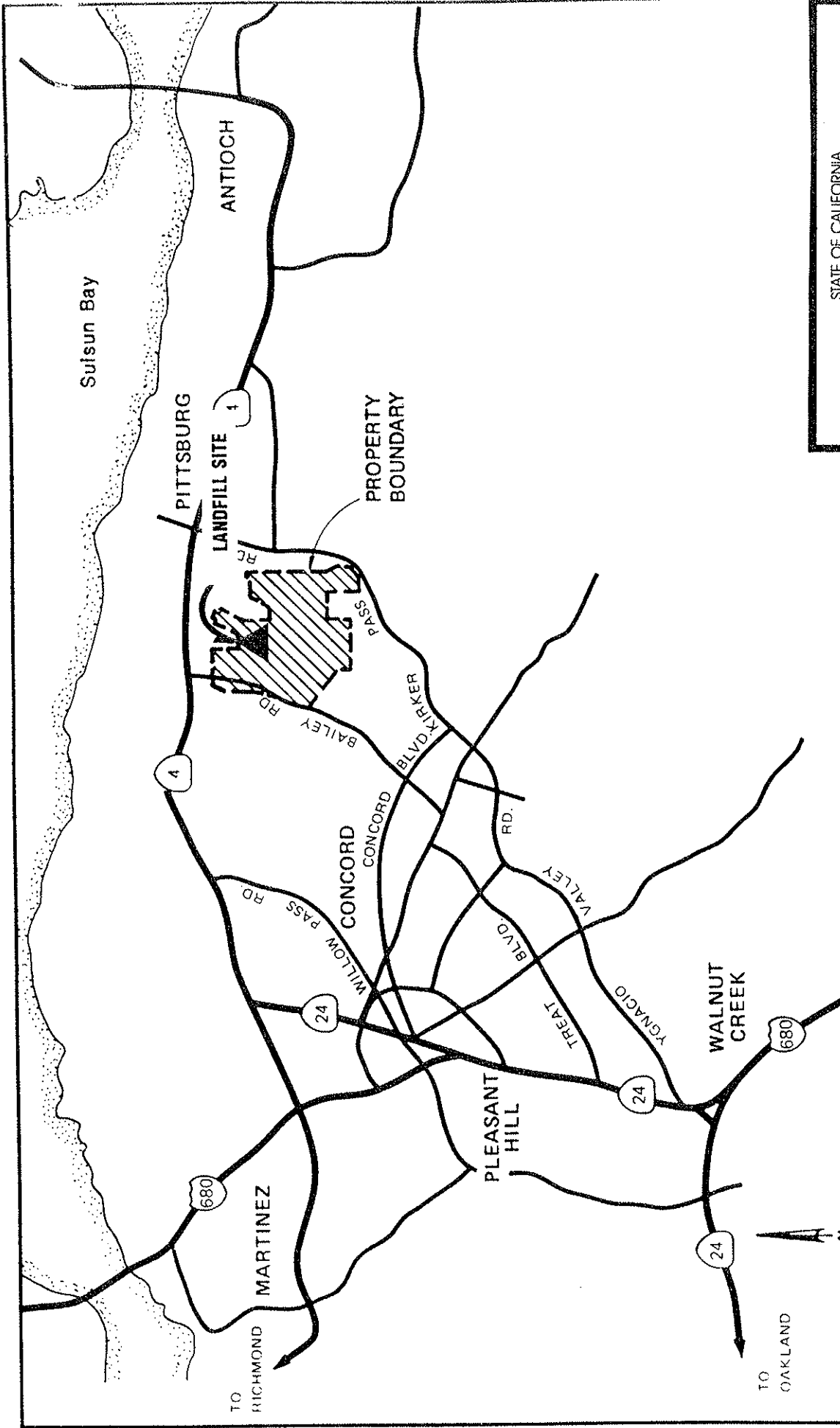
I, Lawrence P. Kolb, Assistant Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 20, 1991.

A handwritten signature in black ink, appearing to read 'L. P. Kolb', written over a horizontal line.

Lawrence P. Kolb
Assistant Executive Officer

Attachments:

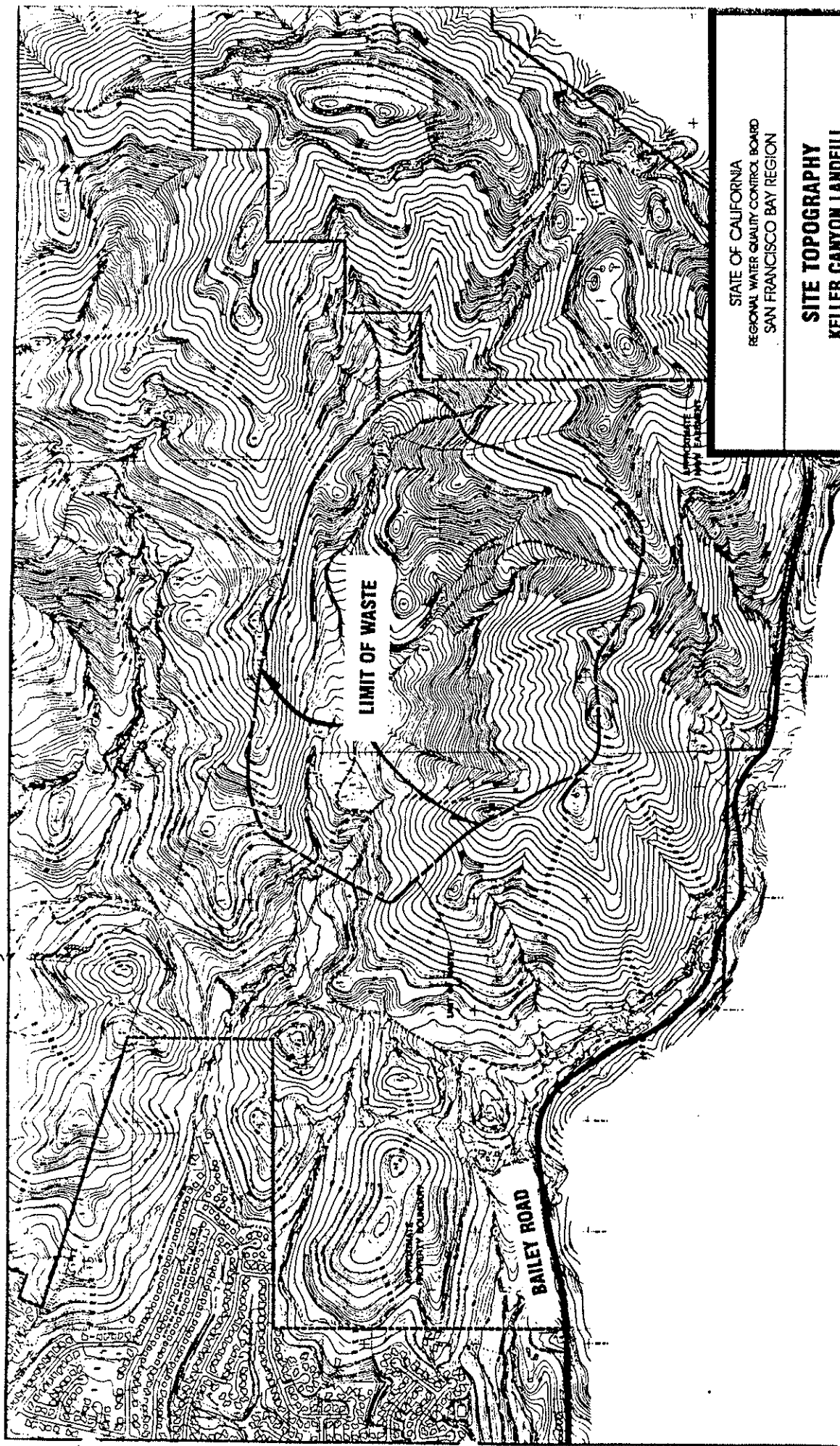
- A) Site Location Map
- B) Site Topography Map
- C) Self Monitoring Program



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SITE LOCATION
KELLER CANYON LANDFILL
CONTRA COSTA COUNTY, CALIFORNIA

ENGNR: GVL DATE: 1/31/91 DRWG. NO. A



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SITE TOPOGRAPHY
KELLER CANYON LANDFILL
CONTRA COSTA COUNTY, CALIFORNIA

ENGR: GVL DATE: 1/31/91 DRWG. NO. B

THE BASE TOPOGRAPHY SHOWN WAS PRODUCED BY AERIAL PHOTOGRAPHIC
PROJECT PHOTOGRAPHY FROM 1977. ELEVATIONS SHOWN ARE IN FEET ABOVE MEAN SEA LEVEL, BASED ON
THE NATIONAL GEODETIC VERTICAL DATUM OF 1989.



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

KELLER CANYON LANDFILL COMPANY

CLASS II SOLID WASTE DISPOSAL SITE

CONTRA COSTA COUNTY

ORDER NO. 91-052

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16. This Self-Monitoring Program is issued in accordance with Provision C.11 of Regional Board Order No. 91-052.

The principal purposes of a self-monitoring program by a waste discharger are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to most recent version of Standard Methods for the Analysis of Wastewater and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State Department of Health. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. A composite sample is a sample composed of individual grab samples mixed in proportions varying not more than plus or minus five percent from the instantaneous rate of waste flow corresponding to each grab sample collected at regular intervals not greater than one hour, or collected by the use of continuous automatic sampling devices capable of attaining the proportional accuracy stipulated above throughout the

period of discharge or 24 consecutive hours, whichever is shorter.

3. Receiving waters refers to any water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas, the surface runoff from the site, the unnamed tributary creek discharging from Keller Canyon are considered the receiving waters.
4. Standard observations refer to:
 - a. Receiving Waters
 - 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
 - 2) Discoloration and turbidity: description of color, source, and size of affected area.
 - 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 4) Evidence of beneficial use: presence of water associated wildlife
 - 5) Flow rate.
 - 6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.
 - b. Perimeter of the waste management unit.
 - 1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on map)
 - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 3) Evidence of erosion and/or daylighted refuse.
 - c. The waste management unit.
 - 1) Evidence of ponded water at any point on the waste management facility.
 - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 3) Evidence of erosion and/or daylighted refuse.
 - 4) Standard analysis and measurements refer to:
 - a. pH
 - b. Electrical Conductivity (EC)
 - c. Total Dissolved Solids (TDS)
 - d. Total Phenols
 - e. Chloride

- f. Total Organic Carbon
- g. Nitrate Nitrogen
- h. Total Kjeldahl Nitrogen
- i. Water elevation in feet above Mean Sea level
- j. Settleable Solids, ml/l/hr
- k. Turbidity, NTU
- l. EPA Method 624, identifying all peaks greater than 1 microgram/liter
- m. EPA Method 625, identifying all peaks greater than 1 microgram/liter.

D. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analysis, and observations according to the schedule specified in Part B, and the requirements in Article 5 of Chapter 15.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

- 1. Identity of sample and sample station number.
- 2. Date and time of sampling.
- 3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.
- 4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used. A reference to a specific section of a reference required in Part A, Section B is satisfactory.
- 5. Calculation of results.
- 6. Results of analyses, and detection limits for each analyses.

F. REPORTS TO BE FILED WITH THE BOARD

- 1. Written self-monitoring reports shall be filed by the 15th day of the month following the report period. In addition an annual report shall be filed as indicated in F.2. The reports shall be comprised of the following:

a. Letter of Transmittal

A letter transmitting the essential points in each self-monitoring report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations, such as, operation and/or facilities modifications. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

b. Each monitoring report shall include a compliance evaluation summary sheet. This sheet shall contain:

- 1) The sample mean and the sample variance for all sample sets taken from all compliance points, and shall determine if the difference between the mean of each sample set and the water quality protection standard is significant at the 0.05 level using Cochran's Approximation to the Behrens-Fisher Student's t-test as described in Appendix II of Chapter 15. The discharger may propose an alternative statistical procedure to be used in making this determination pursuant to Section 2555(h)(3) of Chapter 15. If a statistically significant difference is found this shall be reported as a suspected requirement violation in the letter of transmittal.
- 2) A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations.
- 3) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.

- 4) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations.
- c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
 - d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.
 - 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review.
 - 2) In addition to the results of the analyses, laboratory quality control/quality assurance (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.
 - e. An evaluation of the effectiveness of the leachate monitoring/ control facilities.
 - f. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.
 - g. The quantity and types of wastes disposed of during the past quarter, and the locations of the disposal operations.

2. CONTINGENCY REPORTING

- a. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days. This report shall contain the following information:
 - 1) a map showing the location(s) of discharge;
 - 2) approximate flow rate;
 - 3) nature of effects; i.e. all pertinent observations and analyses; and
 - 4) corrective measures underway or proposed.
- b. A report shall be made in writing to the Board within seven days if a statistically significant difference is found between a self- monitoring sample set and a WQPS. Notification shall indicate what WQPS(s) have been exceeded. The discharger shall immediately resample at the compliance point(s) where this difference has been found and analyze another sample set of at least four portions split in the laboratory from the source sample.
- c. If resampling and analysis confirms the earlier finding of a statistically significant difference between self-monitoring results and WQPS(s) the discharger must submit to the Board within 90 days an amended Report of Waste Discharge for establishment of a verification monitoring program meeting the requirements of Section 2557 of Chapter 15. This submittal shall include the information required in Section 2556(b)(2) of Chapter 15.
- d. The discharger must notify the Board within seven days if the verification monitoring program finds a statistically significant difference between samples from the verification monitoring program point of compliance and the WQPS(s).
- e. If such a difference or differences are found by the verification monitoring program, it will be concluded that the discharger is out of compliance with this Order. In this event the discharger shall submit within 180 days an amended Report of Waste Discharge requesting authorization to establish a corrective action program meeting the requirements of Section 2558 of Chapter 15. This submittal shall include the information required in Section 2557(g)(3) of Chapter 15.

3. **REPORTING**

By January 31 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

- a. Tabular and graphical summaries of the monitoring data obtained during the previous year.
- b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.
- c. A map showing the area, if any, in which filling has been completed during the previous calendar year.
- d. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.
- e. An evaluation of the effectiveness of the leachate monitoring/control facilities.

4. A boring log shall be submitted for each sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. WASTE MONITORING

1. Record the total volume and weight of refuse in cubic yards and tons disposed at the site during the month. Report this information quarterly.
2. Record a description of waste stream to include percentage of waste type, ie., Residential, Commercial, Industrial or Construction/ Demolition debris. Report this information quarterly
3. Record the volume of fill completed, in cubic yards, showing locations and dimensions on a sketch or map. Report this information quarterly.
4. Record location and aerial extent of disposal of each waste type during the month. Report this information quarterly.

B. ON-SITE OBSERVATIONS

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
V-1 thru V-'n'	Located on the waste disposal area as delineated by a 500 foot grid network.	Standard observations for the waste management unit.	Weekly
P-1 thru P-'n' (perimeter)	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit.	Standard observations for the perimeter.	Weekly

C. GROUND WATER MONITORING

STATION	DESCRIPTION	OBSERVATION	FREQUENCY
MW-1 thru MW-'n'	Ground water monitoring wells,as shown on the attached site map.	Standard analysis	Once per quarter.
P-1 thru P-'n'	Piezometers	Piezometric level to nearest 1/100 ft	Once per quarter

D. SURFACE WATER MONITORING

STATION	DESCRIPTION	OBSERVATION	FREQUENCY
SFC-1 SCF-'n'	Surface water as shown on the attached site map.	Standard analysis	Once per quarter.

E. FACILITIES MONITORING

The Discharger shall inspect all facilities to ensure proper and safe operation once per quarter and report annually. The facilities to be monitored shall include, but not be limited to:


- a. Leachate Collection and Removal System
- b. Sedimentation Pond
- c. Leachate Tank
- d. Perimeter diversion channels
- e. Leachate Management procedures and containment capacity.

- F. If the Discharger, through a detection monitoring program, or the Board finds that there is a statistically significant increase in concentrations of indicator parameters or waste constituents over the water quality

protection standards (established pursuant to Provision C.8 of this Order), at or beyond the points of compliance (as established by the Self Monitoring Program), the discharger shall notify the Board or acknowledge the Board's finding in writing within seven days, and shall immediately resample for the constituent(s) or parameter(s) at the point where the standard was exceeded. Within 90 days, or sooner if required by any revised regulations, the discharger shall submit to the Board the results of the resampling.

I, Lawrence P. Kolb, Assistant Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

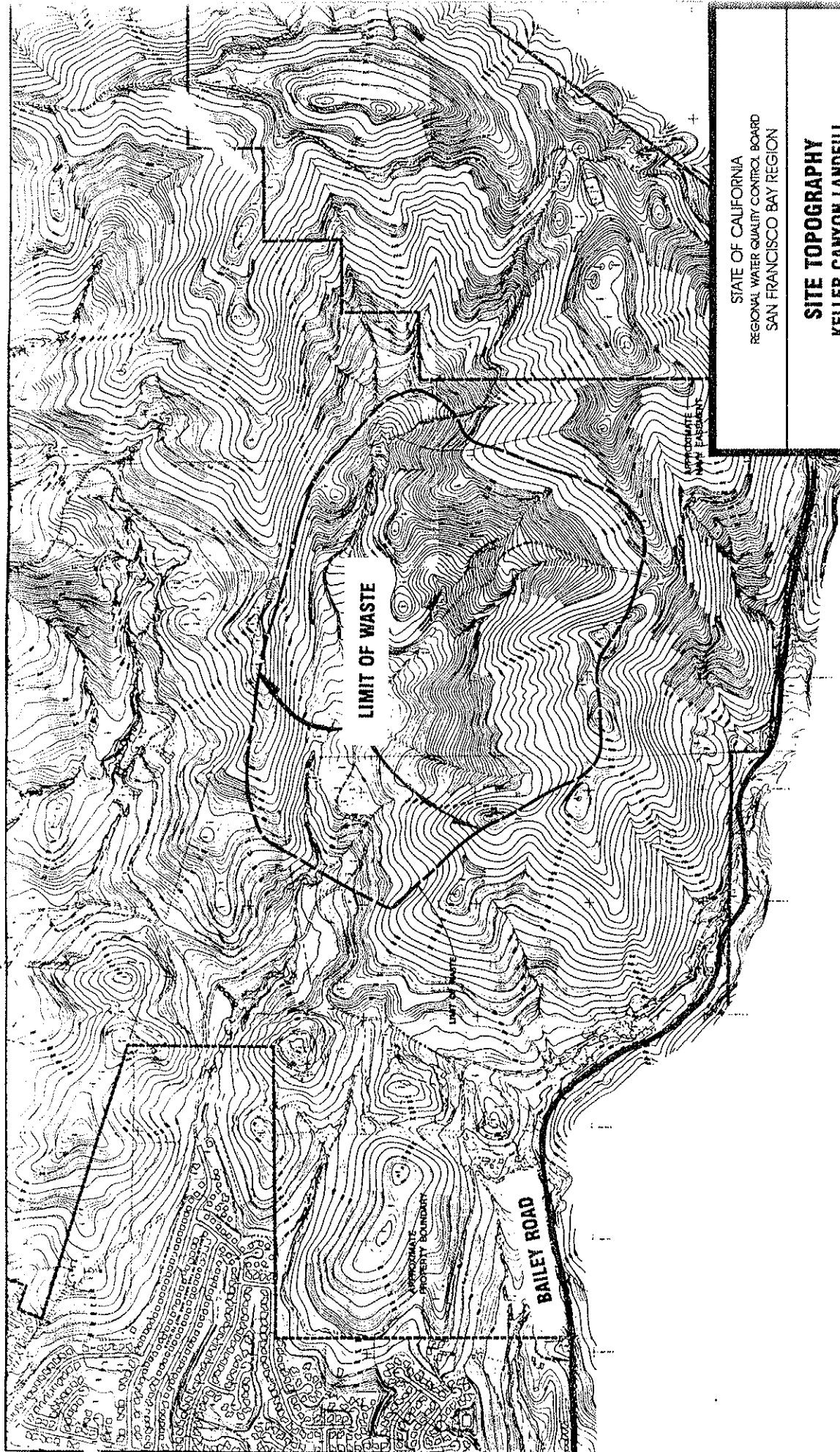
1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 91-052.
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.



Lawrence P. Kolb
Assistant Executive Officer

Date Ordered: 4/15, 1991

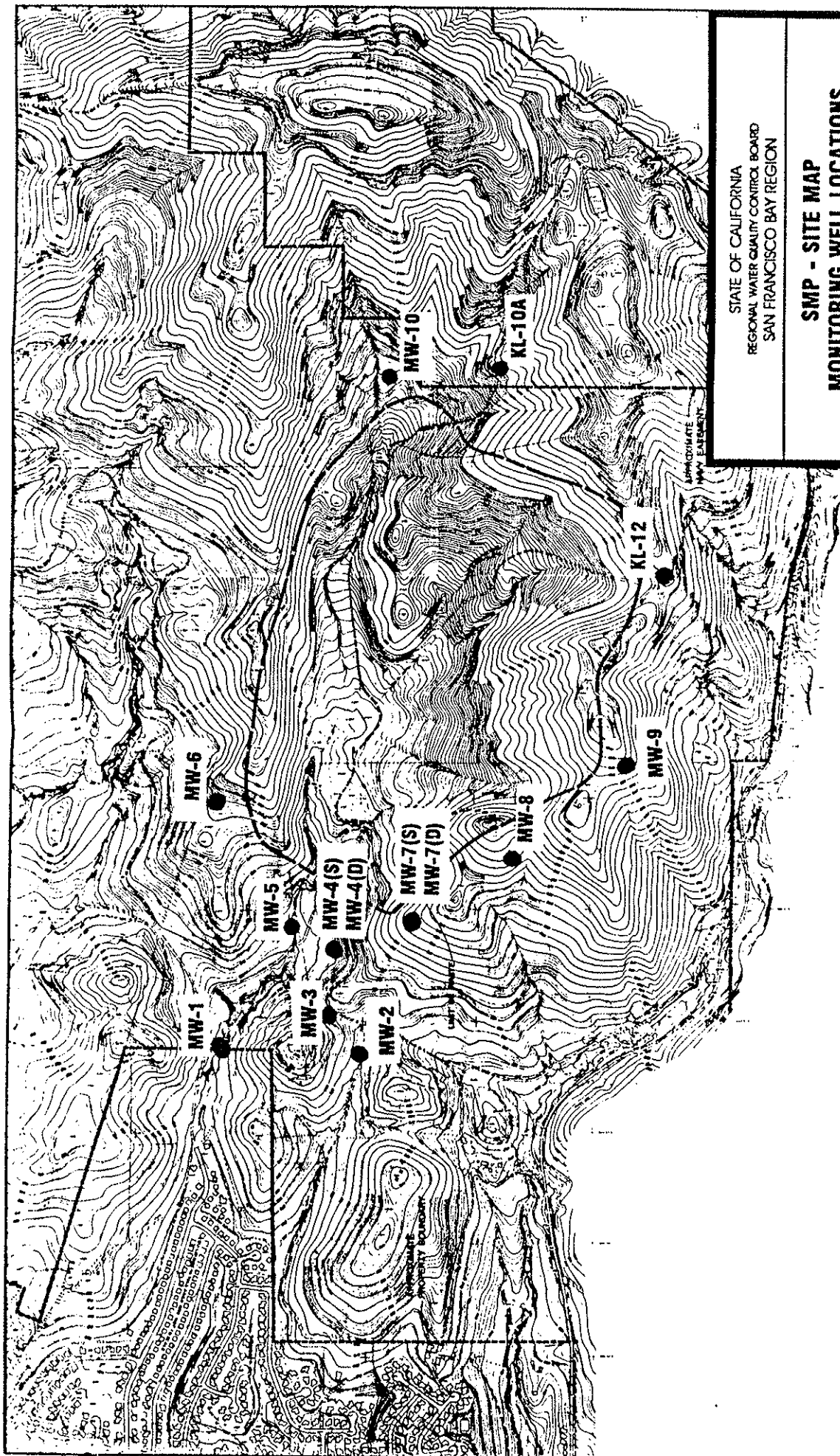
Attachment: Site Maps B & C



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SITE TOPOGRAPHY
KELLER CANYON LANDFILL
CONTRA COSTA COUNTY, CALIFORNIA

ENGNR: GVL DATE: 1/31/91 DRWG. NO. B



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SMP - SITE MAP
MONITORING WELL LOCATIONS
KELLER CANYON LANDFILL
CONTRA COSTA COUNTY, CALIFORNIA

ENGR: GVL DATE: 1/31/91 DRWG. NO. C

THE BASE TOPOGRAPHIC MAP WAS LOCATED FOR A 100' X 100' AREA.
PROJECT NO. 2727. ELEVATIONS ARE BASED ON THE 1985 DATUM.
ELEVATIONS SHOWN ARE BASED ON THE 1985 DATUM. ALL ELEVATIONS
ARE BASED ON THE 1985 DATUM. ALL ELEVATIONS ARE BASED ON THE 1985 DATUM.